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THE ELEMENTARY SCHOOL TEACHER

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EDUCATIONAL PROBLEMS OF ADOLESCENCE

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Not all children develop alike, in truth no two develop in the same way; yet a knowledge of the nascent periods of development and of the aggregate interests of any age may prevent serious mistake in education.

The inherent difficulty of the subject lies in the fact that all study of the child must be objective. It must be made from an adult standpoint and is necessarily full of errors. We get at the mind through the body, which is the reservoir of habit. The mind is not static, but is continually changing and presents different and distinct features at each stage of growth. It grows only by social contact; cannot develop alone, but is a function of social life. It acts only through social stimuli, and develops only in response to social needs.

The educative period of human life has been divided by psychologists into four stages. These groups are not set off from one another sharply by marked lines, by sudden and abrupt changes of characteristics, but they blend into and overlap one another. They are not sorts of phenomena which occur at certain stated periods in the child's life, consisting of physical and mental upheavals.

Dr. Dewey says, "They are simply to be considered as the apexes of waves of greater amplitude. It is not so much that

the old has fallen off, but that the new has come in, and coming in, it assimilates into itself a great many of the other features."

In other words each period is characterized by a new standpoint in which the old activities have not disappeared, but remain to show themselves under different conditions, while the new activities give character to the period.

Thus, then, in discussing the adolescent, one must bear in mind the characteristics of the preceding stages of growth, how these came to be, what they do, in short, what is their relation to the general scheme of development.

"Character in infancy is instinct, in childhood it is slowly made over into habits, while at adolescence it can be cultivated through ideals."

Adolescence differs from the preceding stages in that the changes are more marked and sudden. To the average observer it is almost a Minerva birth. From childhood the boy springs full grown to manhood, the girl to womanhood. It is literally a new birth, a time when physical, mental, and moral changes take new departures.

The most marked physical characteristic is of course the rapid growth. At this time the normal annual per centage of increase in height, weight, and strength is from 15 per cent. upward.

Although in varying ratios, the bones—the arms, the legs, the thighs—all grow both in length and in breadth.

The brain, which has almost reached its maximum size at the eighth year, continues to increase slightly, while the skull shares in the general development of the bones.

Muscular growth, especially in the larger fundamental muscles, is also rapid. Lungs and chest are augmented in size, while the heart increases its volume from an average of 160 to 225 cubic centimeters, and during this period, quite reverses its relation to the circulatory system.

Previous to adolescence the heart is small while the blood vessels are large, but in the adult, the opposite condition prevails.

One noticeable feature of this rapid physical growth is its lack of harmony. Asymmetries of form and function in the

right and left half of the body are common. The shoulders or head tips slightly, or the spine curves, or there is a disposition to lop or stoop in standing and sitting.

The muscular growth is out of proportion to bone growth, sometimes resulting, when the linear growth of the bone is less than that of the muscles, in flexibility of the joints; when it is greater, if the unequal tension is extreme, in contractures or warping of the bones. The characteristic clumsiness of the adolescent is largely due to this disproportion between bone and muscle growth, together with the rapid development of the larger muscles and the retarded growth of the smaller and finer muscles which make all the delicate adjustments.

Adolescence is an apparently healthy stage, when judged by the low death rate. Yet it is, in truth, a period susceptible to disease. Childish disorders are still in evidence, and adult diseases have already made their appearance. Anemia, hysteria, epilepsy, heart trouble, nervousness, headache, eye disorders, some forms of chorea, spinal curvature, and digestive trouble; are all more or less familiar.

In addition to the diseases peculiar to the age, city life, with its impure air, its liability to contagion, and its distracting hindrances to that repose which is so essential to youth—city life is directly responsible for much ill-health.

Many of the digestive troubles are due to unwise habits of eating, which again have their origin in the vagaries of appetite, which is "not an infallible guide to physiological needs." Stanley Hall claims that this is the nascent period for establishing a well-balanced dietary, and wisely suggests the value of judicious oversight eked out on occasion by a little wholesome authority. It is probably true that the greater number of breakdowns in later student life is due to errors in diet. Much of this ill health, which is neither illness nor health, but on the border land between the two conditions, is owing to physical unbalance.

If any of the vital organs fail to grow in proportion to the growth of the body, they are subject to strain, become unable to do the work required of them, and tend to collapse. Any

strain or tension now is dangerous. Curvatures are likely to result from an ill-fitting desk, or from any occupation that requires an unnatural position, or produces strain or excessive confinement.

There is an especial risk in commenting upon the increased height of a child as in his efforts to reduce or hide it, he may assume a crouching position which will affect the shape of the bones or depress the chest, which in turn may affect the lungs. More than one case of this has come under my observation.

Doubtless, the most important physical changes are involved in the development of the sex function. These changes are of vast importance, physically and mentally, furnishing, as they do, some explanation of the mental and moral characteristics of the period; but they do not naturally cause the pathological conditions emphasized by Dr. Hall. Normal functions under normal conditions do not bring about abnormal results.

As the most striking physical feature at this time is the rapid growth, so the most prominent mental characteristic is emotional instability, which at the beginning quite overshadows the intellectual changes. New emotions come into being, old emotions are intensified; desires, vague yearnings are felt. There is a great influx of nervous energy, a desire to do things, a consciousness of self, which leads to that overassertion of individuality that shows itself in boastfulness; this is sometimes the expression of conscious weakness assuming a strong position. Altruism and self-interest struggle for the mastery. It is a period of introspection and reverie, of self-consciousness and self-criticism, sometimes extending to morbidness. Imagination runs riot, the youth sees visions and dreams dreams. His power of imitation is strong, a new interest in speech develops, the use of slang culminates, while the dramatic instinct is at its height. It is withal a *social* period; intense and devoted friendships are formed, interest in adults and a desire to be treated as adult shows itself. The old occupations and amusements no longer suffice, new activities and new interests are demanded. The future for the first time becomes all-important, the present is overshadowed. There is a widening of the child's horizon, he begins to recog-

nize his relation to society, and is interested in social life as it reveals to him his own place and its meaning. This enlargement of the sphere of his interests makes it also a period of personal readjustment to the new point of view, and the effort on the part of the individual to reconstruct himself, as it were, the effort to meet the new situation, is the primary cause of the emotional disturbances which have gained for this age the title of the "storm-and-stress period."

The intellectual changes are no less important than the physical and the emotional. The higher thought processes show themselves. Reasoning grows more formal and elaborate. The child becomes more reflective. He is interested in principles and makes large generalizations. He discovers and formulates relationships. Details have now new meaning—they are instances or examples of some general law.

But with this coming into function of new desires and new interests comes also normally the evolution of the higher powers of control and inhibition, and if the physical and mental characteristics of the previous periods of growth have been developed under proper conditions, the educational problems of adolescence resolve themselves into one problem, i. e., that of adjustment to the social organism. If, however, the preceding periods of growth have not been properly utilized, they give rise to important adolescent problems.

We are slowly coming to see that there is an order of development, physical and mental, and that education must observe that order. The details have not yet been worked out, but enough has been done to point the way. The theory of nascent periods of development maintains that if any power is not exercised properly at its appropriate time, it will be arrested in its development. Mr. O'Shea has pointed out that a nerve center loses its plasticity when the wave of ripening moves past it to other centers; and this results, not only in the arrest of this particular function, but it influences other functions by interfering with the readiness of association between centers that can become connected only through the undeveloped one.

In all the organs, periods of growth seem to alternate with

periods of functional activity. A period of unconscious ripening precedes functional activity. Frequently, moreover, the period of functional activity is succeeded by a further period of unconscious growth or incubation, followed by another and higher manifestation of functional activity, and so on, growth and activity sustaining a sort of rhythm with increasing richness and development.

The period of functional activity is the critical period both for the function itself and all the functions associated with it. This period may be sustained by proper nutrition and a basis be laid for future strength. Or, by a lack of nutrition it may be retarded, the effect of which would be seen in arrested development.

If a child is compelled to repeat any form of activity, when in the normal course of development the attention should be upon a higher activity, the higher powers do not mature. The tendency is to remain on the lower plane. Every teacher knows with what distaste adolescents respond to drill and repetition in studies that they commonly regard as belonging to childhood while they are amenable to forms of discipline that they consider a part of the life of their contemporaries and elders. Shop work with emphasis on technique, gymnastics, military drill, *do* seem to make more or less appeal to them. The adolescent is not concerned primarily in getting *control* of a tool, but in *using* that tool to work out his ideas, thus enlarging his experience. Drill prolonged beyond the nascent period, or overemphasis upon thoroughness, or excessive devotion to detail, will result not in mental growth, but in the arrest of growth.

There is also that other danger which perhaps is more apparent than arrested development. I refer to forcing or overstimulation—so often the result of parental vanity—resulting in the precocious child, whose powers, like the hothouse plant, forced to early maturity, soon decay.

In childhood, the second division of the periods of mental development, the emphasis is upon the motor side. At this time the child is interested in the process rather than in the product. Dr. Donaldson believes that the development of the higher areas

of the brain depends upon the development of the motor areas. Since the motor areas function first, they should be exercised first educationally. If this is not done, the higher areas, which are in a measure dependent upon them, can never be completely developed. Psychologically, this means that muscular experiences are essential to the gaining of clear definite effective ideas of the world.

Childhood is the period for play, which at this time is not only a factor in the child's present growth, but it is an element of future efficiency. Play is the vicarious living of the child. He goes through typical race experiences, experiments; discovers, and forms habits. Doubtless, to the fact that many children are deprived of these muscular experiences is to be attributed the vague, formless images which many adolescents hold. But the important thing is that the child must carry on an activity in order to comprehend it. In early life all activities must be lived out; but the central elements of these activities remain with the individual in generalized form, and as he grows older, these only are needed for readjustment. It thus follows that in maturity the mental activity finds it easier to gain the ascendancy.

It is evident, if the lines of development that I have indicated are in the right direction, the duty of training the adolescent is for the home as well as the school. The work of each is distinct from the other, and yet in perfect harmony one with the other. Today we are asking ourselves the question, What can the *school* do in this direction?

We Americans are proud of our public school. We deem it the panacea for all individual and social ills, and the condition of higher development. How is it meeting the needs of this period of life? If I were asked to name the most vital function of the school, I should unhesitatingly say, "To give its pupils worthy ideals of life." Theoretically, the old ideals of mere study and brain work are passing. Theoretically, "the old order changeth, yielding place to new." The public school is not primarily to better the material condition of any child. Its justification lies in gain to the state in terms of citizenship, and just so far as individual advancement means increased responsi-

bility for one's fellows, loyalty to the community through efficient service, constructive appreciation of property rights, both public and private property, and a recognition of group interests, to that degree, and that only, the interest of the state and the success of the individual are one and the same.

The purpose of the curriculum is not alone to advance the pupil in knowledge. Any adequate curriculum must take into account the *whole* child, physical, intellectual, spiritual. It must take account of his present stage of growth, must know the relation of his present to his *past*, must *utilize* his past experiences, and above all recognize his present working capital—his mental equipment—and make no attempt to go back of or beyond that. This curriculum must have its foundations in the culture already achieved by the race. It must look forward to the child's future, to the society in which he is to live.

The material that enters into this curriculum should be selected in accordance with the normal development of the student, and with the direct purpose of aiding in that development. It should be material that arouses his interest, that demands his highest effort, and answers his present needs.

We believe that the mental state is to some extent dependent upon the physical condition. The school can do much physically for its pupils, both directly and indirectly. First, the amount of mental work in early adolescence, especially for boys, should be replaced by a great deal of physical work. In this same connection, let me recommend increasing the time devoted to sleep. I've noticed that many young people often object to early rising. This is probably due to the fact that they require more sleep than they are accustomed to take. If your child must sit up late at night to prepare his lessons for the next day, something is wrong. Either he has unduly postponed beginning his preparation or the work required is excessive, or he is advanced beyond his ability. Studying late at night is not a virtue. There should be no undue strain in intellectual work. Study should be a pleasure, and there should be time for recreation.

Much less time should be spent in the schoolroom and much more spent in the open air, in walking or running or skating or

swimming; in playing ball or tennis or golf; in games and amusements appropriate to the season. For indoors, there are dancing, fencing, basket ball, and other games and plays which combine recreation with the needed muscular development. Walking is an especially valuable exercise. The adolescent should not be sent to school in an automobile. High-school girls suffer from a lack of physical exercise at this the golden age of development. This is the period for exercising the larger fundamental muscles that move the trunk, large joints, back, shoulders, hips, neck, elbows, and knees. Formerly when industries were carried on in the home the occupations were such as developed these basal muscles. But with the advent of the shop and factory, the occupations which our young people carry on require only the use of the finer muscles. When this work is fine, exact, and overprecise, we have again the danger of nervous strain and tension. For this reason sewing and much fine needlework are not well suited to girls in the upper grammar grades. Other forms of textile work are better adapted to this age.

Direct physical training should be part of the daily programme. In this exercise special attention should be paid to carriage and bearing. The work should consist of free gymnastics with exercises on the apparatus. Stress should be upon the larger muscles. The result of this work should appear in dexterity, alertness, in grace and ease of movement, as well as in increased strength and power of endurance. The exercises given to girls should not be the exercises given to boys. By this I do not mean that they should be *easier*, but that they should be different—planned in each case to meet the needs of the differently developing bodies. Plays and games, recreative gymnastics adapted to the stage of growth should form part of this course. Withal the exercises should be co-ordinated and progressive, leading on the one hand to physical and mental control, on the other to that natural democratic spirit which comes when young people meet on a common plane. For all who need it, this course should include corrective exercises to offset the defects of the school and home life; or the misfits between environment and nature. The changed relation between the parts of the body lessens for

the time their co-ordination and unity. This renders it a plastic period, a time when previous abnormal growths may be overcome, both by nature and by physical training.

The problem as Dr. Hall states it is how far "to stimulate each part in its period of greatest or least development; whether to stimulate the powers that excel, to their highest possibilities, or to emphasize drill on the weaker part."

The mental traits of the adolescent indicate quite clearly what should be the essential characteristics of the studies chosen. They must be reflective and comparative, to accord with the newly born capacities. The increased nervous and mental energy must be occupied by studies of increasing difficulty. The interest in speech and language must be met by the study of foreign languages and formal grammar. The emotional life must find its outlet through oratory and the dramatic art. The tendency to introspection and analysis must be satisfied by the disclosing of the inner connections and deeper reasons of the subjects taught. The newly aroused social interests must be fostered by the introduction of social work. The desire to do things must be satisfied by the opportunity for creative work.

The right of constructive work to a place in the lower grades of elementary school is now practically conceded, although the work to be *added* to an already full curriculum. From the standpoint of mental growth, it has an equal right in the high school. While the adult is able to some extent to readjust the central elements of his previous activities, motor experiences in young children are fundamental. The adolescent is in transition from childhood to adult life, and his mental activities are still more or less (mostly more) dependent upon his muscular experiences. And so I repeat, from the standpoint of individual efficiency or control, the industrial arts are essential to the high-school student. Mind is a function of social life. "It is only through the development of the whole race that any one man can develop." These arts are in their very nature social. They have grown out of man's efforts to meet the needs of life. Their development, to quote Miss Clara Mitchell, has resulted "in our present state of society with its sum of *knowledge* and stored up *power*;

knowledge organized into science, mathematics, history, civil law, philosophy; *power* expressing itself as skill in the arts of living—agriculture, manufacturing, commerce, social government, language, literature, and the fine arts.”

Economic and social principles have guided the race in the evolution of knowledge. Should not the individual, the unit of the race, apply the same principles? Should we not introduce our young people to the typical lines of *human experience*, not only in industry and trade, but also in intellectual and social activities?

Many things indicate general dissatisfaction with the existing intellectual methods in our high schools. Chief among these is the fact that so many of the brighter students, especially boys, leave school before the end of their course. The complaint, when stated, is that these studies as carried on have no connection with life, that they throw no light on the vital situation which the youth finds facing him.

It is a significant fact that so many are enrolling themselves in technological schools. This movement toward industrial education is not in the direction of commercialism. It is to be interpreted as a demand on the part of students for vital contact with life processes—a direct first-hand knowledge of the factors which control society.

Whatever our individual prejudices on the question of the race problem, we must all acknowledge the insight and genius directing the educational experiment at Tuskegee. There we see an inferior race being raised to a distinctly higher level of civilization—to better citizenship—through industrial education.

In the George Junior Republic, and as near home as Alledale, we see a lawless class of youths through industrial and social organization brought to nothing less than a marvelous degree of moral action. Our technical high schools have proved that boys who have taken the manual-training high-school course enter college better equipped in the academic studies, and at an earlier age than those who have taken only the classical course.

In response to the demand for individual activity, we have introduced handwork into many of our schools. As yet the

general public questions their value and denies their right in the school curriculum. Last fall a prominent lawyer, whose son has been in our school six years, told me that he did not believe in handwork. He thought it all right for young children, had not seriously objected to it before his son entered the eighth grade, but now he wanted him to do *serious* work—meaning by that mathematics, Latin, and English. He expected his son to be a lawyer, and manual training would be of no advantage in that profession. Perhaps, rather doubtfully, it was all right for every boy to know *some* trade, yet none of the boys in the School of Education would ever follow a trade, and he really didn't see why this work had a place in the school.

The gentleman expressed a common point of view regarding social occupations. He perhaps expressed your own sentiments. They are good for young children, for the colored race, the laboring, and the lawless classes. But for your own children you want something more. And in one sense you are right. A smattering of knowledge, a minimum of skill in woodwork, metal-work, pottery, weaving, cooking, gardening, sewing, modeling, drawing, painting, bookbinding, or printing is not educative in the highest sense. Knowledge and skill in the fundamental processes of any or all of them, training for trade, does not necessarily educate. Only when these activities come into the school as vital parts of the curriculum, only when their social value is felt by all the workers, are they a means of education. When the work is broad enough and in sufficient variety to interest every pupil, when it is great enough to use all his powers, when it is connected with nature on the one hand and society on the other, it will be to the children the educational instrument it has been to the race.

It is the social and historic phases which make the difference between work as a trade and educative work, between the artisan and the artist. The one is material, the other spiritual, leading upward to a higher plane of living.

When the youth in the schoolroom is engaged in the activities that he sees going on in the larger world about him, he encounters difficulties which he cannot surmount except by the help of science. So the facts and principles of physics and chemistry

and botany come in to aid in his daily living. He meets problems whose solution leads him to the past. History then throws light on his present, and becomes a living study. The interest in the work leads naturally to a study of the raw materials, to a study of the finished products, to comparison of the various methods, past and present, used in securing these products. It leads to an understanding of the facts and forces of the industrial world, organized industry, and commerce. It interests the students in the lives of other workers in these various kinds of work and their relation to the social whole. It forms the background for all industrial and social history. The pupil comes to all subjects a questioner with problems that have grown out of his own experience. Learning is no longer a matter of *memorizing*. Knowledge becomes the realization of a subject through a living experience; and so constructive work opens up all knowledge, affords training for all the mental faculties, socializes the individual.

We have introduced the social occupations into the school, but we have not yet socialized the school, so that these activities fall into their normal place. And herein lies the weakness of the present situation. A socialized school is one that organizes society to help the individual, one whose chief aim is to develop in the individual the power for and the inclination toward social usefulness.

The socialized school uses gymnasiums, studios, workshops, and laboratories as means of developing a socialized being. It is necessary that the individual should have experience in every one of the fundamental activities which have built up society before he can have an intelligent appreciation of the society. But the work of socialization in the individual is but half done when this fundamental experience has been gained. A further and equally important function of the school, and we have not always done this, is so to organize these various shops, studios, and gymnasiums, that the community life, thus brought about, may in itself call out the highest effort of each individual and return to him the larger culture which rightfully should be his.

The socialized school must organize itself in such a way that the school life is one with the community life, so that the youths are co-operators in the work of the world.